



Title: OUT-OF-POSITION FRICTION STIR WELDING OF
HIGH MELTING TEMPERATURE ALLOYS

Applicant: Steel et al.

Application No.: 10/769,551

1/14

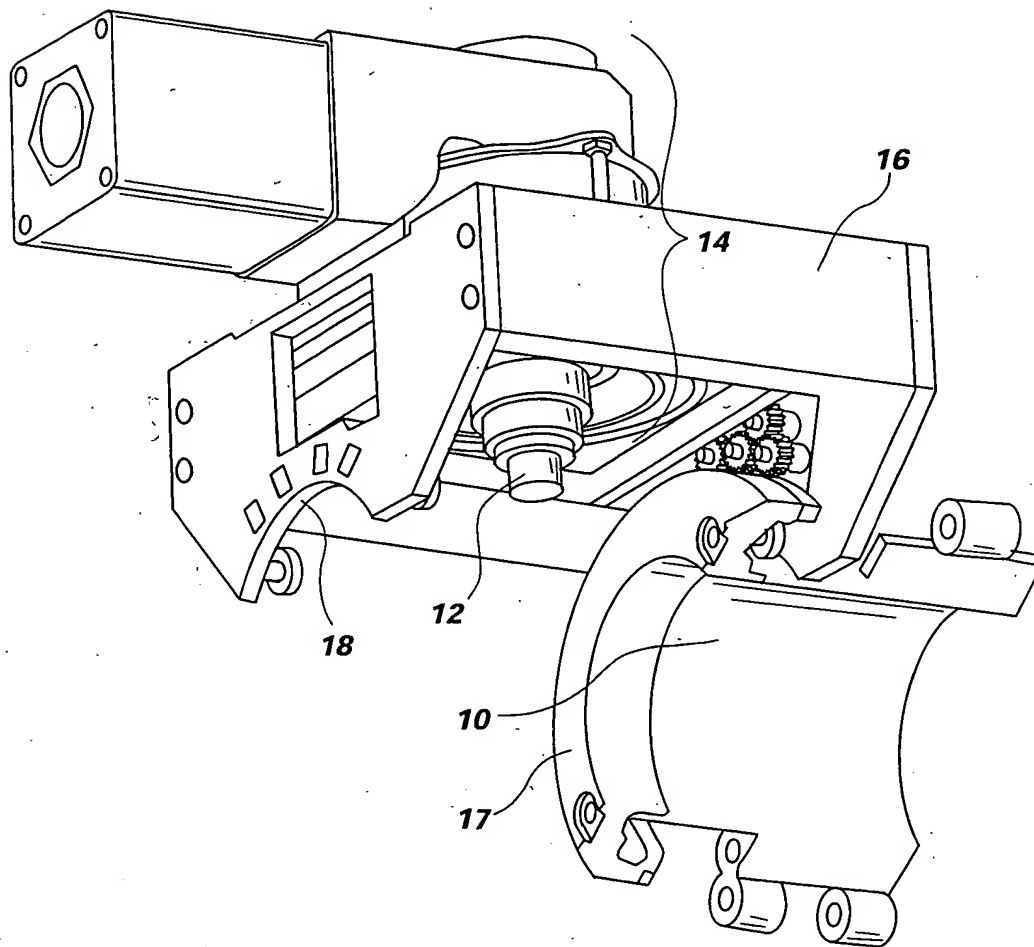


FIG. 1

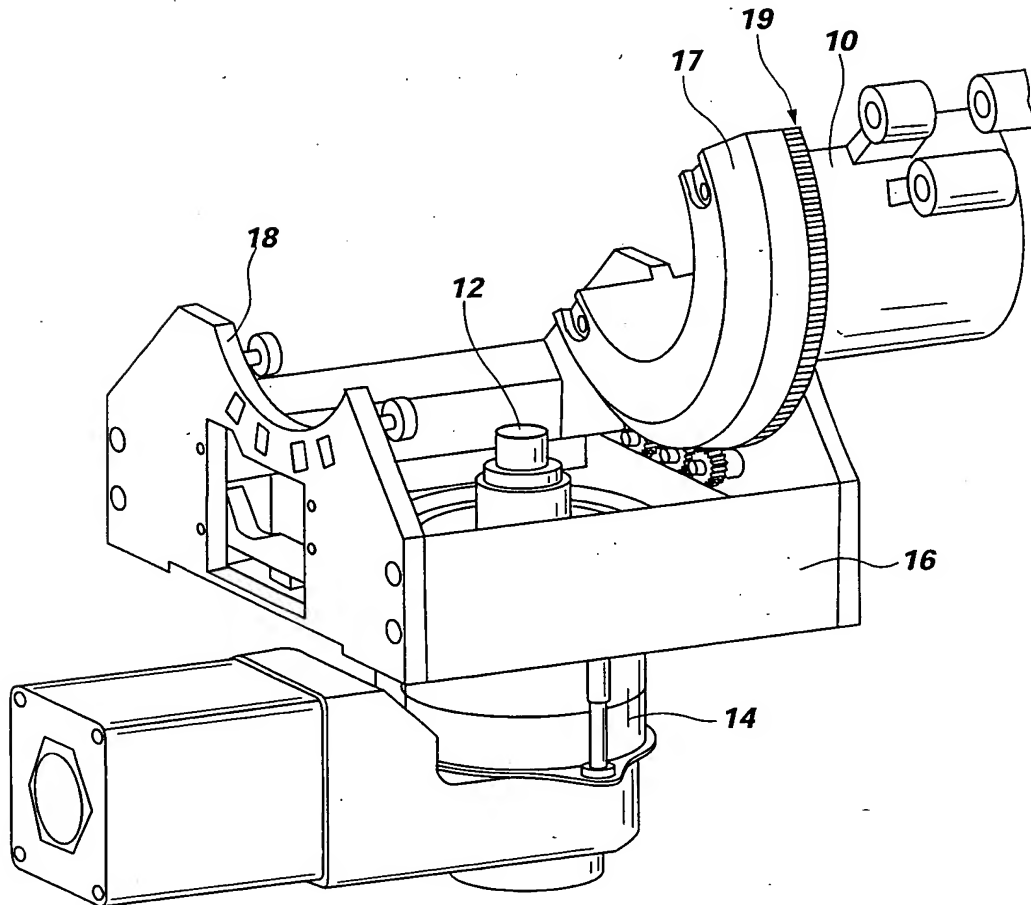


FIG. 2

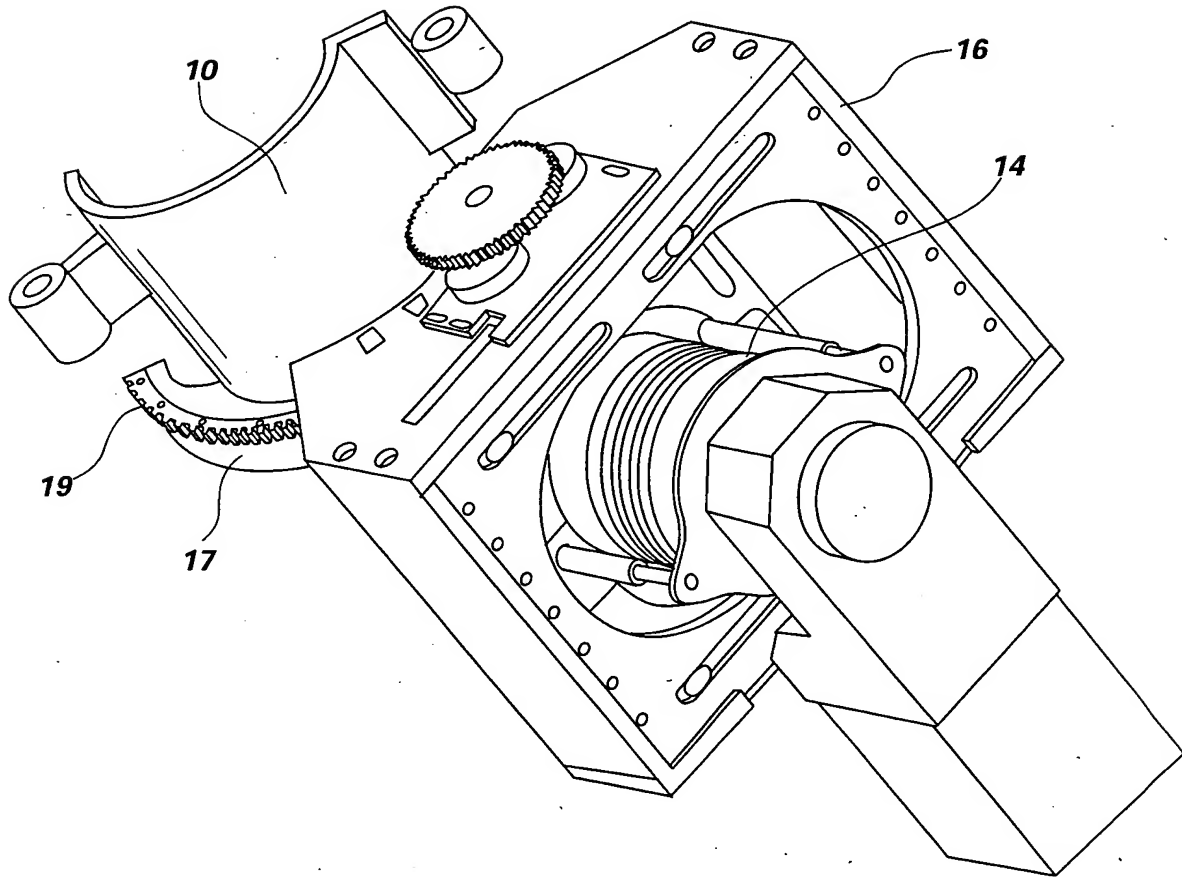


FIG. 3



FIG. 4

This cross-sectional view shows a multi-layered structure. A central assembly, indicated by bracket 34, is positioned between two horizontal layers. The assembly includes a top rectangular block 32, a central vertical component 12, a horizontal component 36, a lower vertical component 38, and a bottom rectangular block 32. The top and bottom blocks are connected to the central vertical components. The central vertical component 12 is flanked by two horizontal lines, with label 23 on the left and label 26 on the right. The horizontal component 36 is flanked by two horizontal lines, with label 42 on the left and label 40 on the right. The lower vertical component 38 is flanked by two horizontal lines, with label 38 on the left and label 40 on the right. The bottom rectangular block 32 is flanked by two horizontal lines, with label 32 on the left and label 40 on the right. The entire assembly is situated between two horizontal layers, with the top layer labeled OD and the bottom layer labeled ID.

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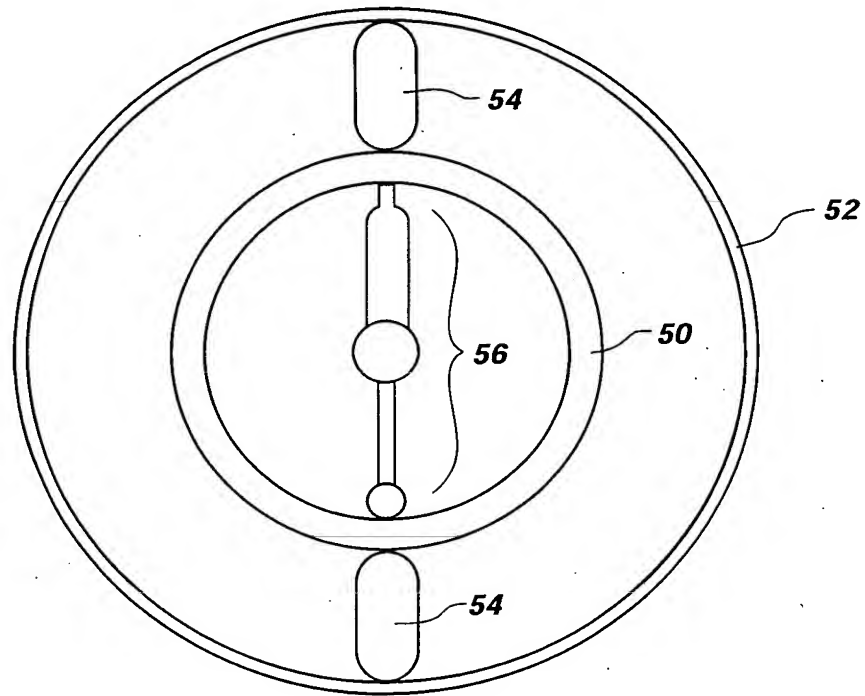


FIG. 7

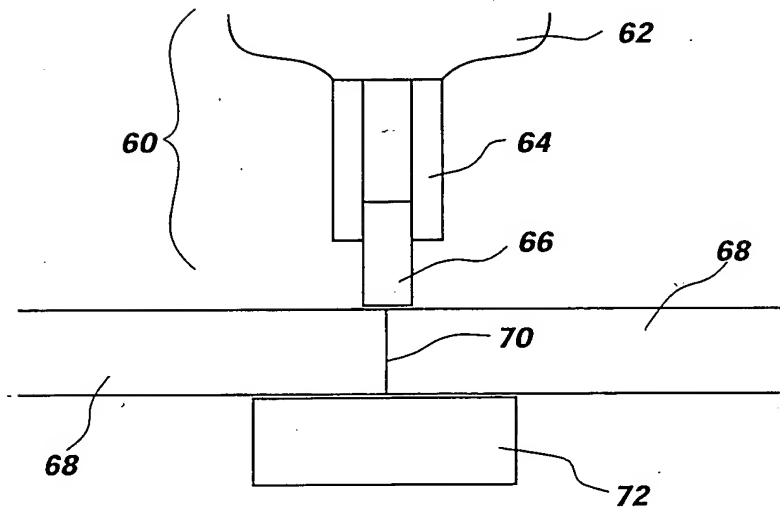


FIG. 8

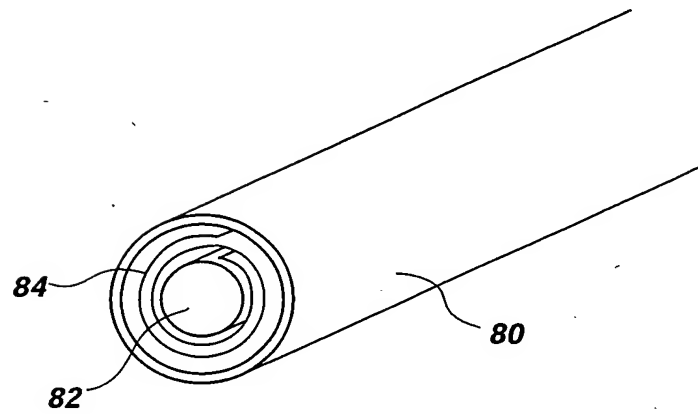


FIG. 9

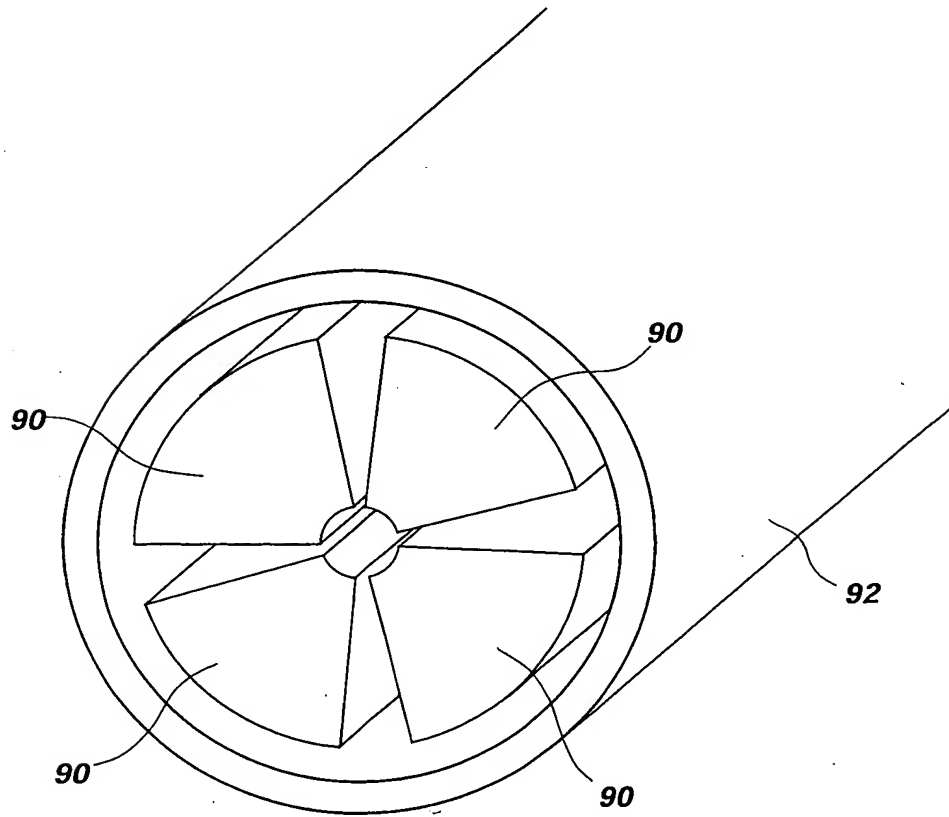


FIG. 10

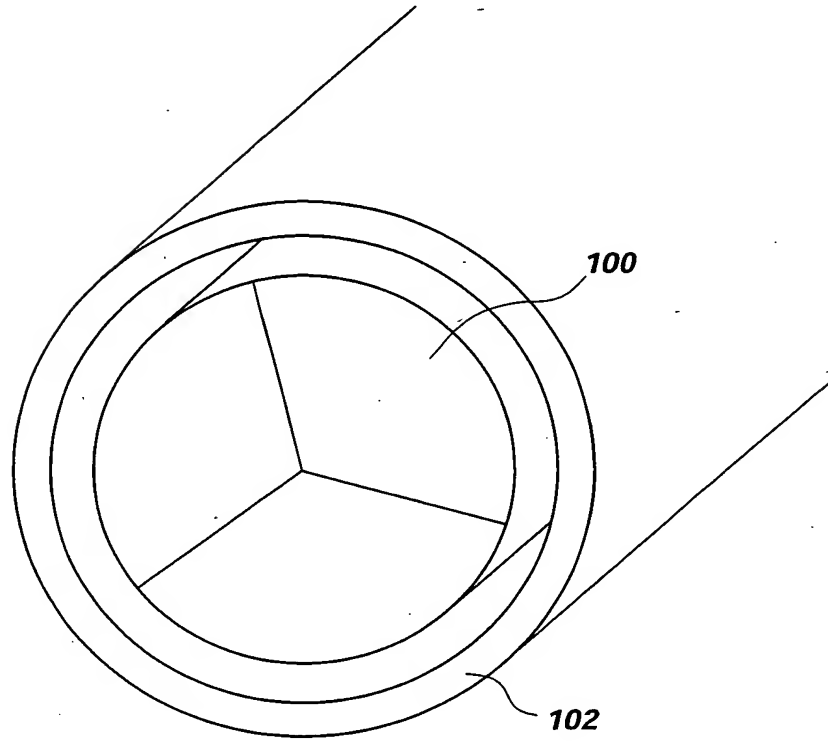


FIG. 11

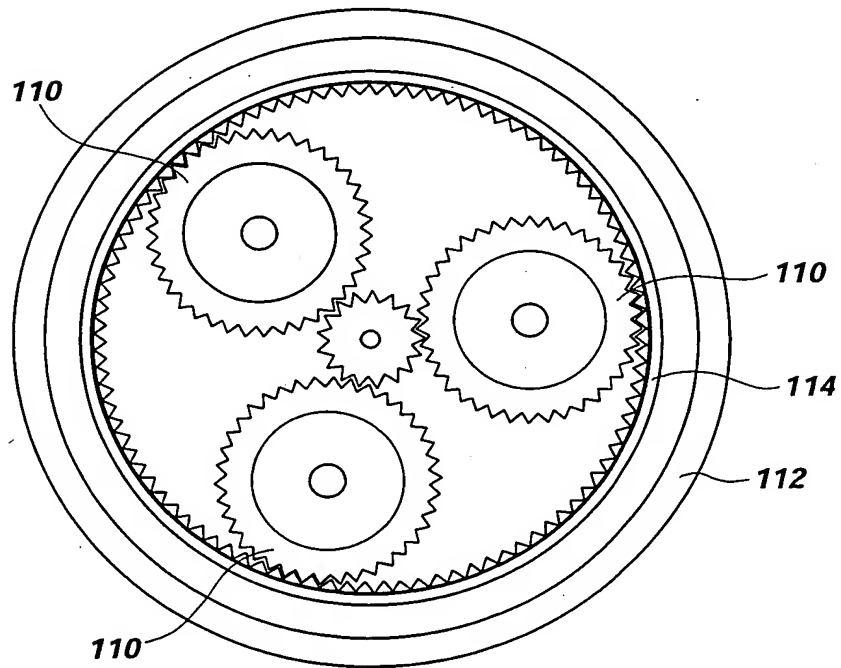


FIG. 12

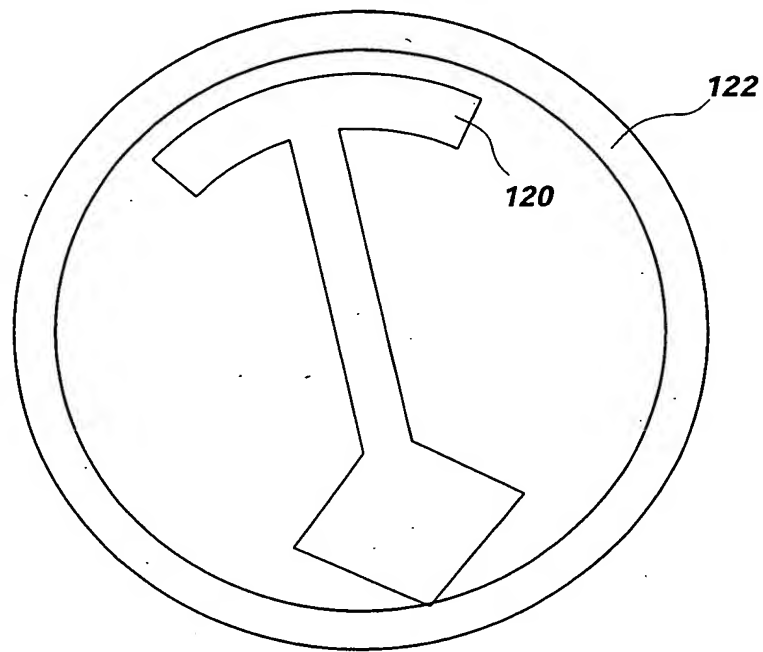


FIG. 13

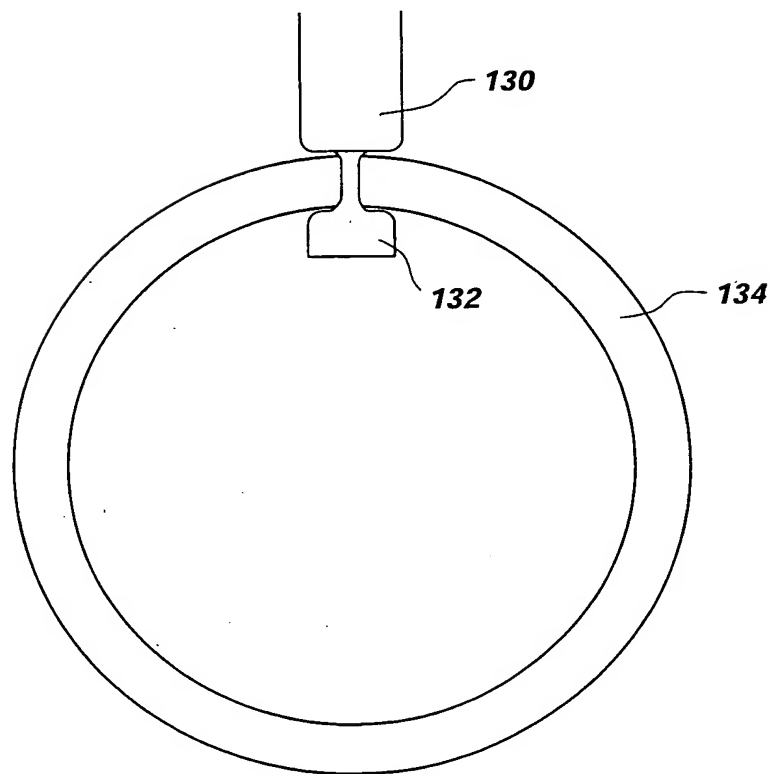


FIG. 14

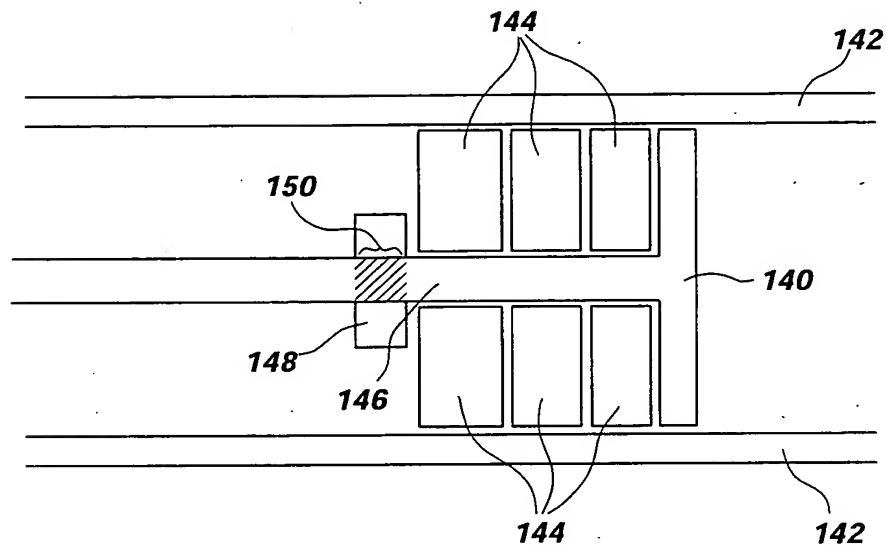


FIG. 15

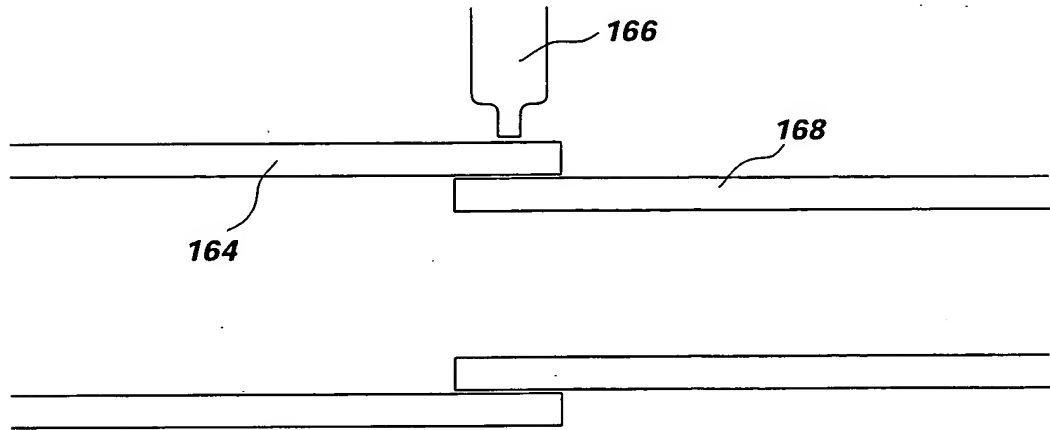


FIG. 16B

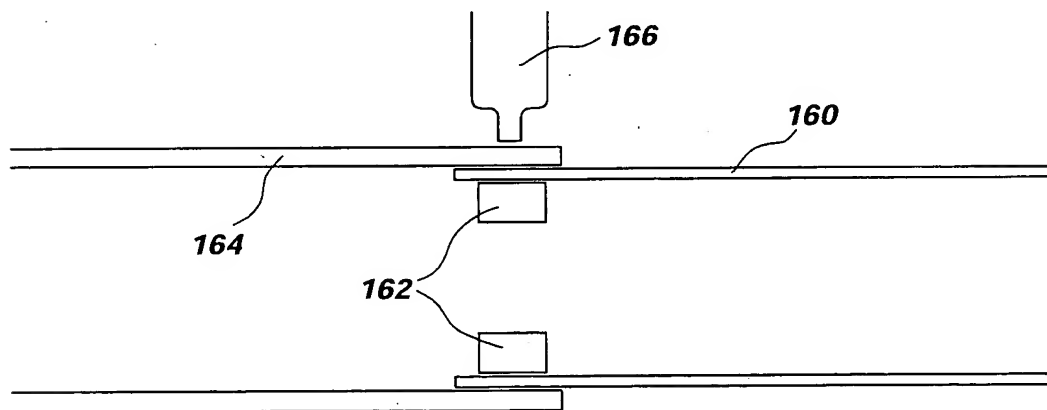


FIG. 16A

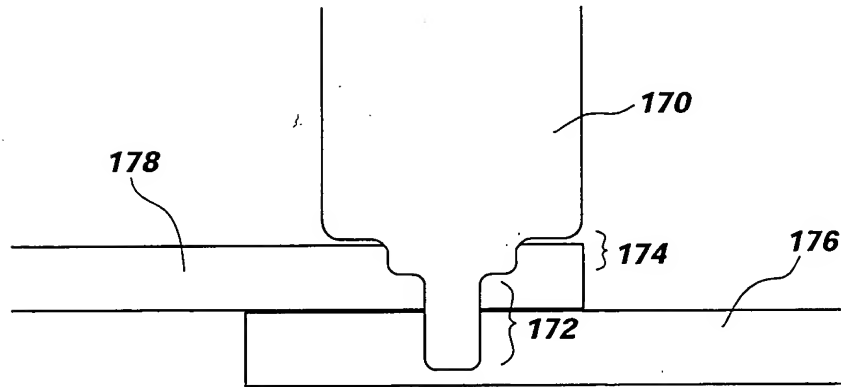


FIG. 16C

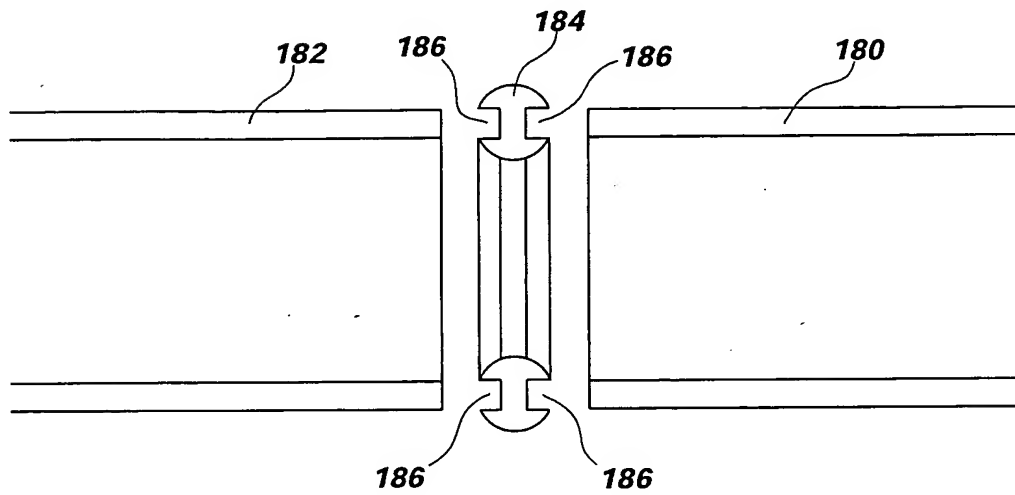


FIG. 17

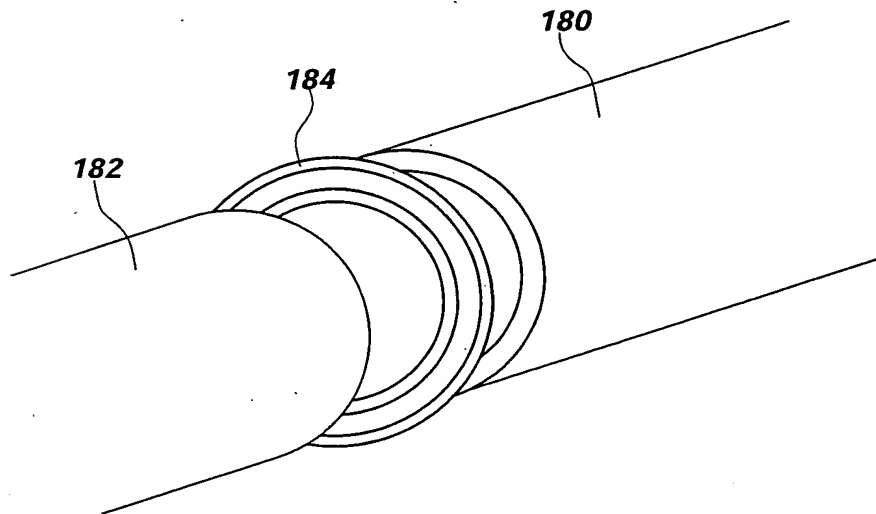


FIG. 18

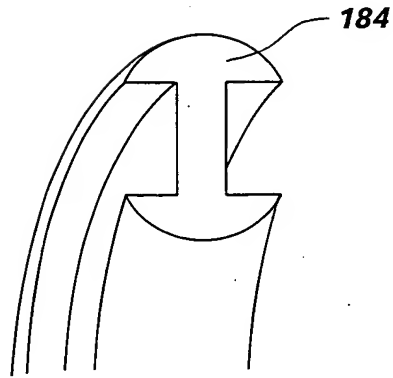


FIG. 19

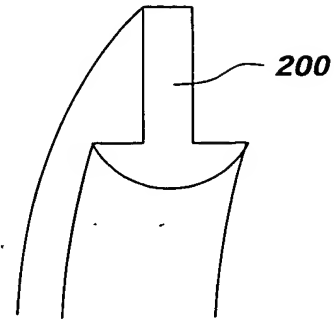


FIG. 20

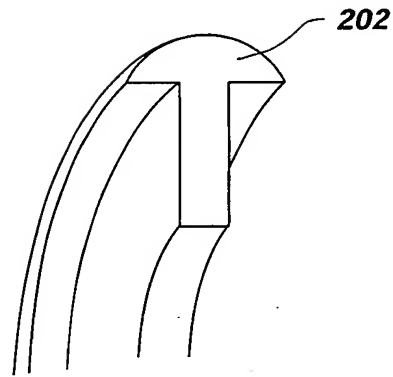


FIG. 21

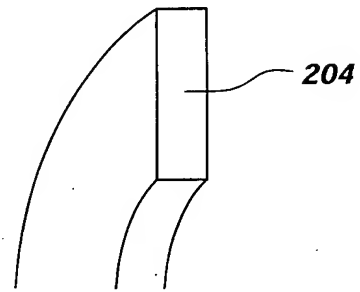


FIG. 22